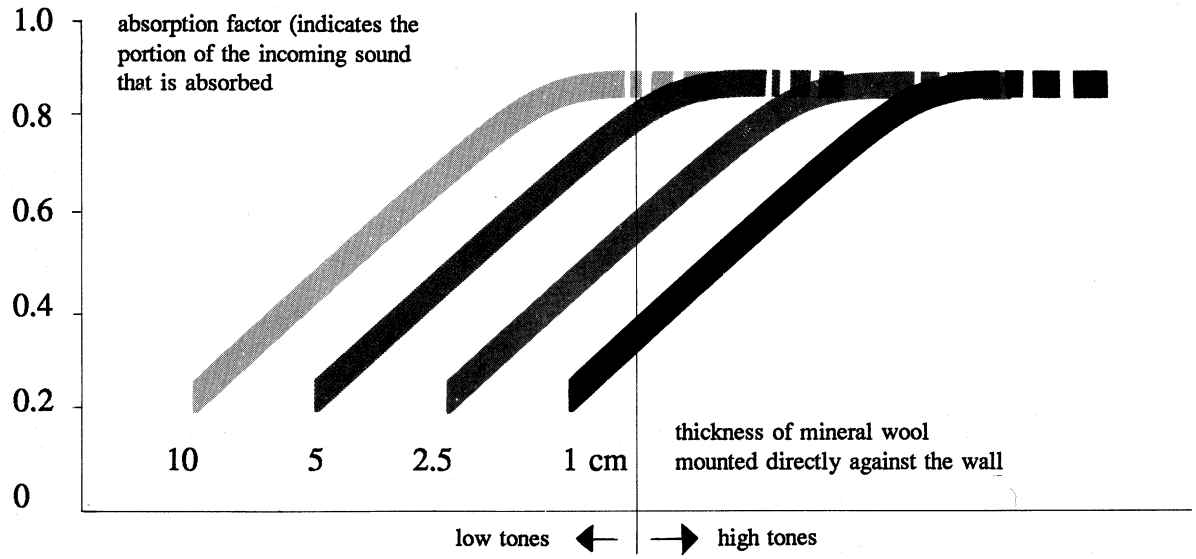
THICK, POROUS LAYERS ABSORB BOTH HIGH AND LOW FREQUENCY SOUND

Porous material through which air can pass often makes a good sound absorber. Examples of such materials include felt, foam rubber, plastic foam, textile fibers, and a number of sintered metals and ceramic materials. If the pores are closed, the absorption is low. Thin porous absorbents handle high tones. For good absorption below 100 Hz, the thickness required may become impractical. Low frequency absorption is improved with the aid of an air gap behind the absorbing layer.

Principle



Example

A workshop with intense low frequency noise is provided with absorbers that are effective for low tones. One part of the shop contains space for hanging sound absorptive baffles, which provide good low frequency abosrption, and are easily installed. A traverse leaves no room for baffles in the other part of the shop. Instead, horizontal sound absorptive panels are installed above the traverse, 20 cm from the ceiling, to improve the low–frequency absorption. With sound absorptive material on the walls and ceiling, the noise levels in the shop can be reduced 3 to 10 dB, except in the immediate vicinity of the noise sources.